How to run jobs at CCJ

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2006.08.15

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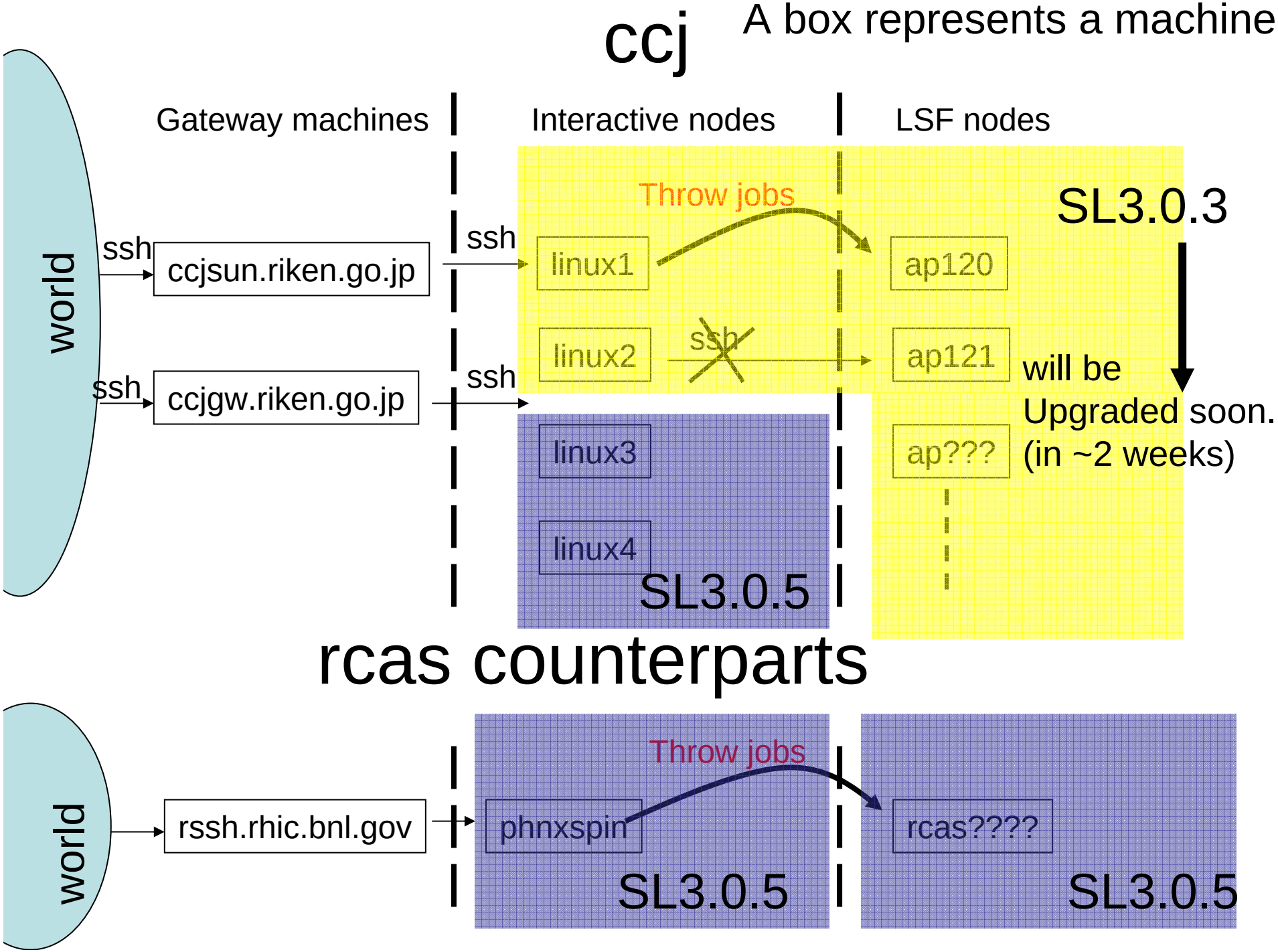
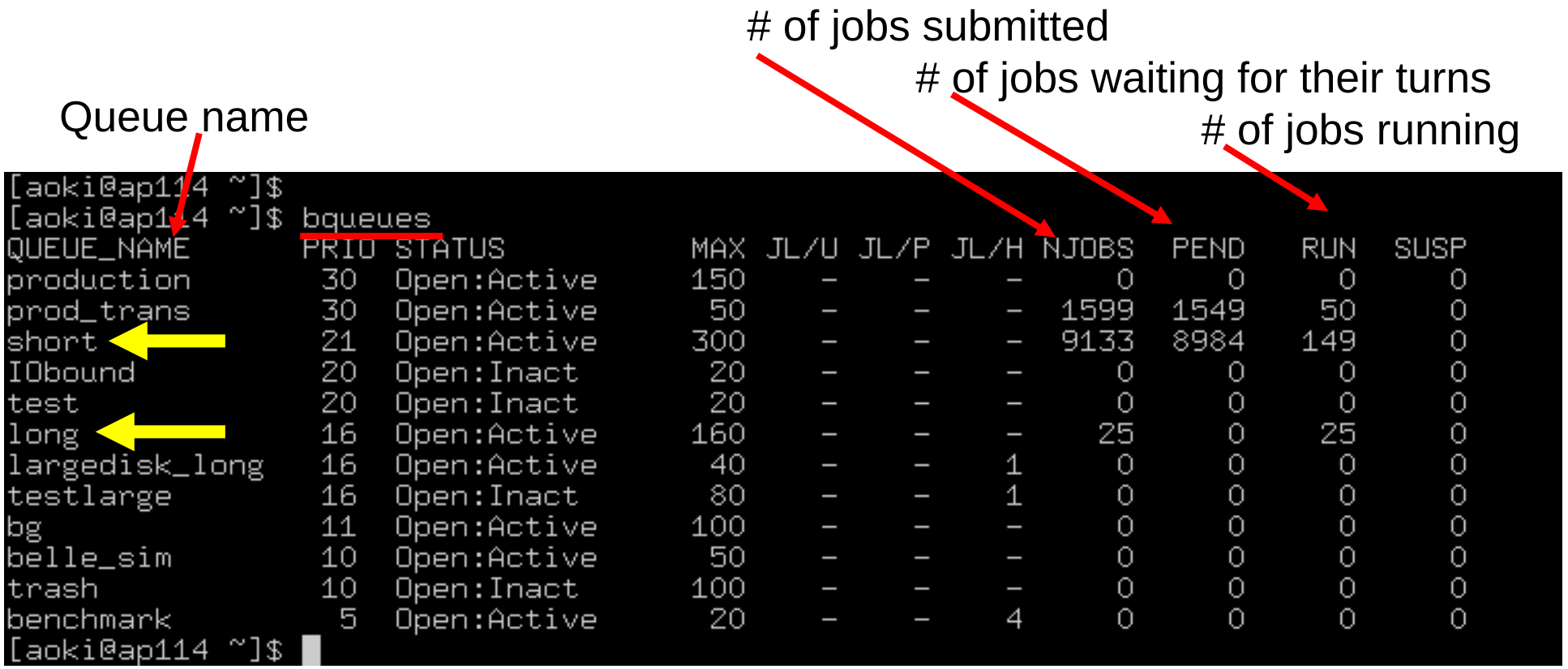

ccj
A box represents a machine
Gateway machines
Interactive nodes
LSF nodes
world
ssh
ccjsun.riken.go.jp
ssh
ccjgw.riken.go.jp
ssh
ssh
linux1
linux2
linux3
linux4
Throw jobs
ssh
ap120
ap121
ap???
SL3.0.3
will be
Upgraded soon.
(in ~2 weeks)
SL3.0.5
rcas counterparts
world
rssh.rhic.bnl.gov
phnxspin
Throw jobs
rcas????
SL3.0.5
SL3.0.5

LSF commands
(all you need is these 3 commands)

- bqueues
  - Show status of job queues
- bsub
  - Submit jobs
- bjobs
  - Show status of your jobs

bqueues – show status of queues




```
[aoki@ap114 ~]$
[aoki@ap114 ~]$ bqueues
QUEUE_NAME      PRIO STATUS          MAX JL/U JL/P JL/H NJOBS  PEND   RUN  SUSP
production       30  Open:Active     150    -    -    -     0     0     0     0
prod_trans       30  Open:Active      50    -    -    -  1599  1549    50     0
short            21  Open:Active     300    -    -    -  9133  8984   149     0
IObound          20  Open:Inact       20    -    -    -     0     0     0     0
test             20  Open:Inact       20    -    -    -     0     0     0     0
long             16  Open:Active     160    -    -    -    25     0    25     0
largedisk_long   16  Open:Active      40    -    -    1     0     0     0     0
testlarge        16  Open:Inact       80    -    -    1     0     0     0     0
bg               11  Open:Active     100    -    -    -     0     0     0     0
belle_sim        10  Open:Active      50    -    -    -     0     0     0     0
trash            10  Open:Inact      100    -    -    -     0     0     0     0
benchmark         5  Open:Active      20    -    -    4     0     0     0     0
[aoki@ap114 ~]$
```

You need to know these two queues only.

short	Less than 2 hours.
long	Longer than short.

bsub – submit a job

```
[aoki@ap114 ~/tutorial]$ bsub -q short -e test.err -o test.out work-test.csh
Job <208209> is submitted to queue <short>.
[aoki@ap114 ~/tutorial]$
```

file for “stderr”

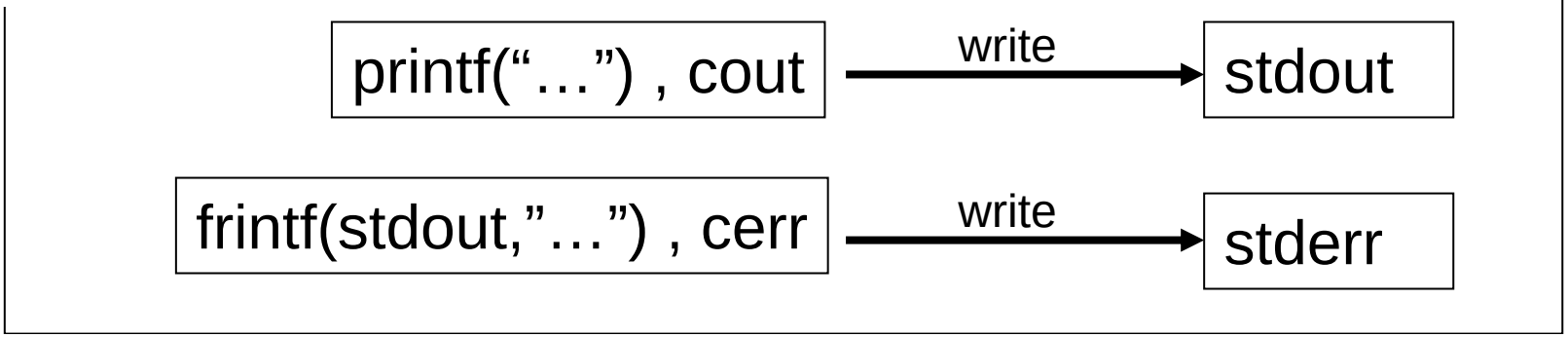
Your job

```
bsub –q short   -e test.err   -o test.out   work-test.csh
```

queue name.
(“short” or “long”)

file for “stdout”

What’s “stdout” and “stderr”?



bjobs – show status of your jobs

When the job is waiting for its turn

```
[aoki@ap114 ~/tutorial]$ bjobs
JOBID   USER    STAT  QUEUE      FROM_HOST   EXEC_HOST   JOB_NAME   SUBMIT_TIME
208209  aoki    PEND  short      ap114                   *-test.csh Aug  9 05:44
[aoki@ap114 ~/tutorial]$
```

When the job is running

```
[aoki@ap114 ~/tutorial]$ bjobs
JOBID   USER    STAT  QUEUE      FROM_HOST   EXEC_HOST   JOB_NAME   SUBMIT_TIME
208209  aoki    RUN   short      ap114       ap17        *-test.csh Aug  9 05:44
[aoki@ap114 ~/tutorial]$
```

When the job is finished

```
[aoki@ap114 ~/tutorial]$ bjobs
No unfinished job found
```

You've learned all three commands that you need!
You are ready to go. (¯o¯) -y- ~~~

It's easy…

But…

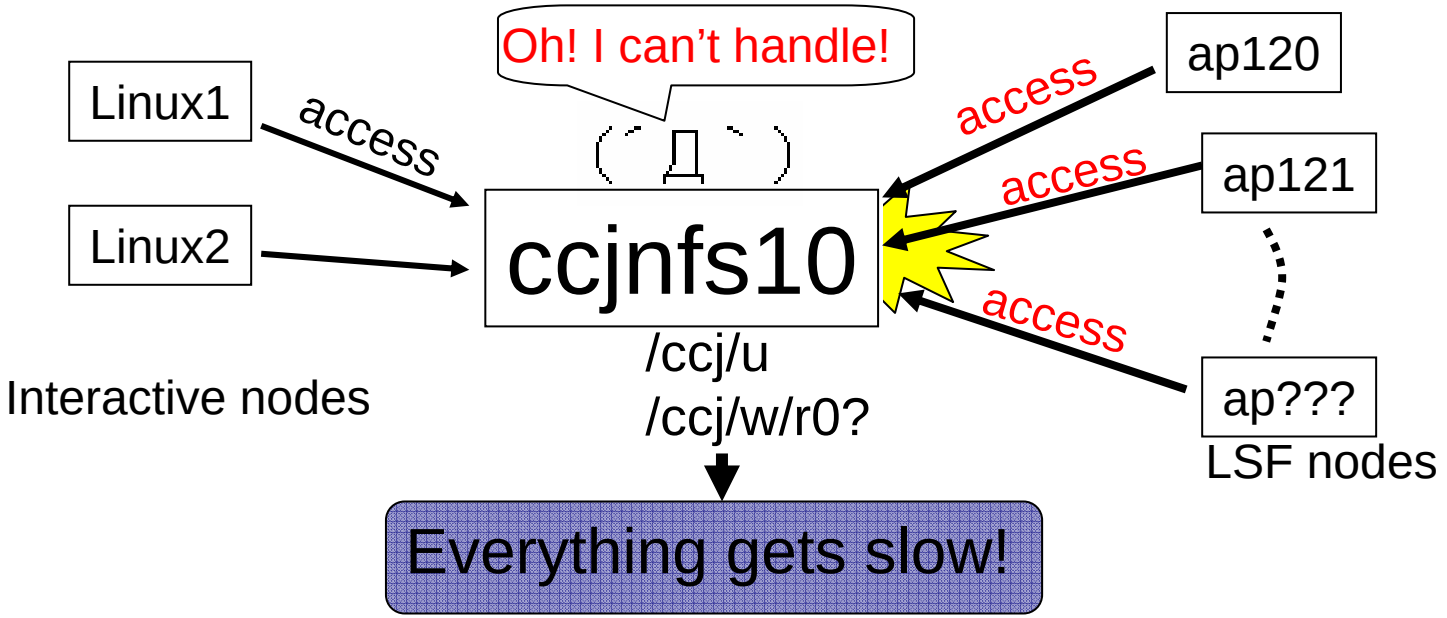
There are some rules you should obey. Otherwise
Other job submitters (or even interactive node users)
have trouble because of YOU.

A box represents a machine

ccjnfs10

NFS mount at CCJ

Data on /ccj/u (like /home) is wiritten on this machine.
Shared by ALL other machines.(by NFS mount)

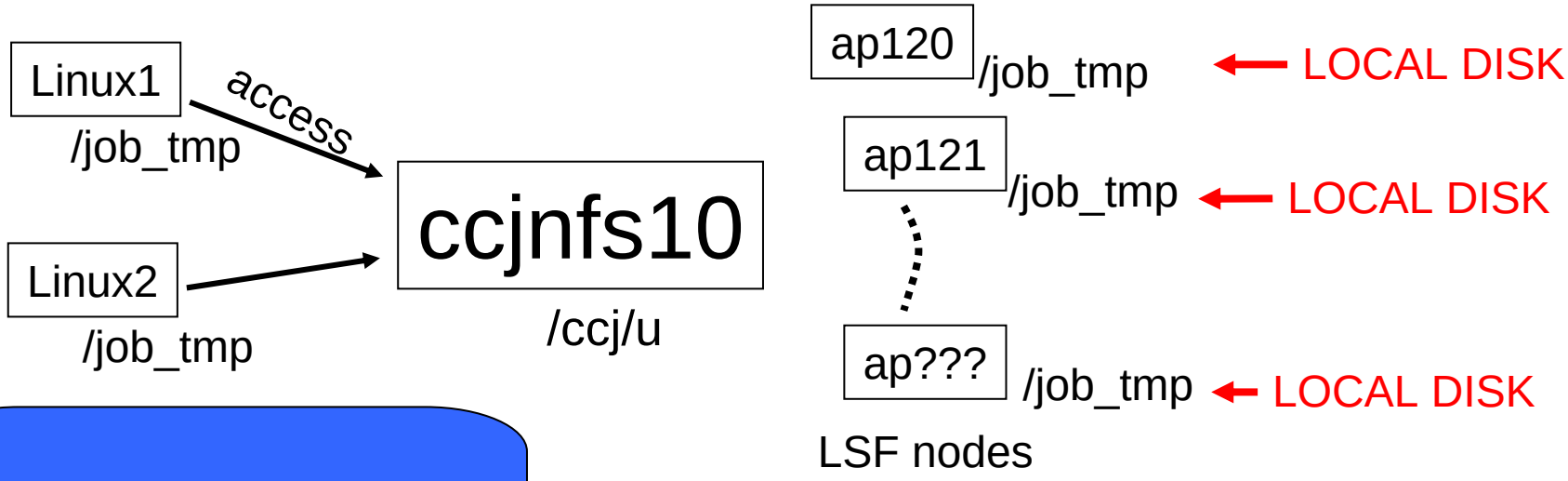


YOUR JOBS SHOULD NOT RUN at /ccj/u

YOUR JOBS SHOULD NOT write output files at /ccj/u

A black box represents a machine

NFS mount at CCJ



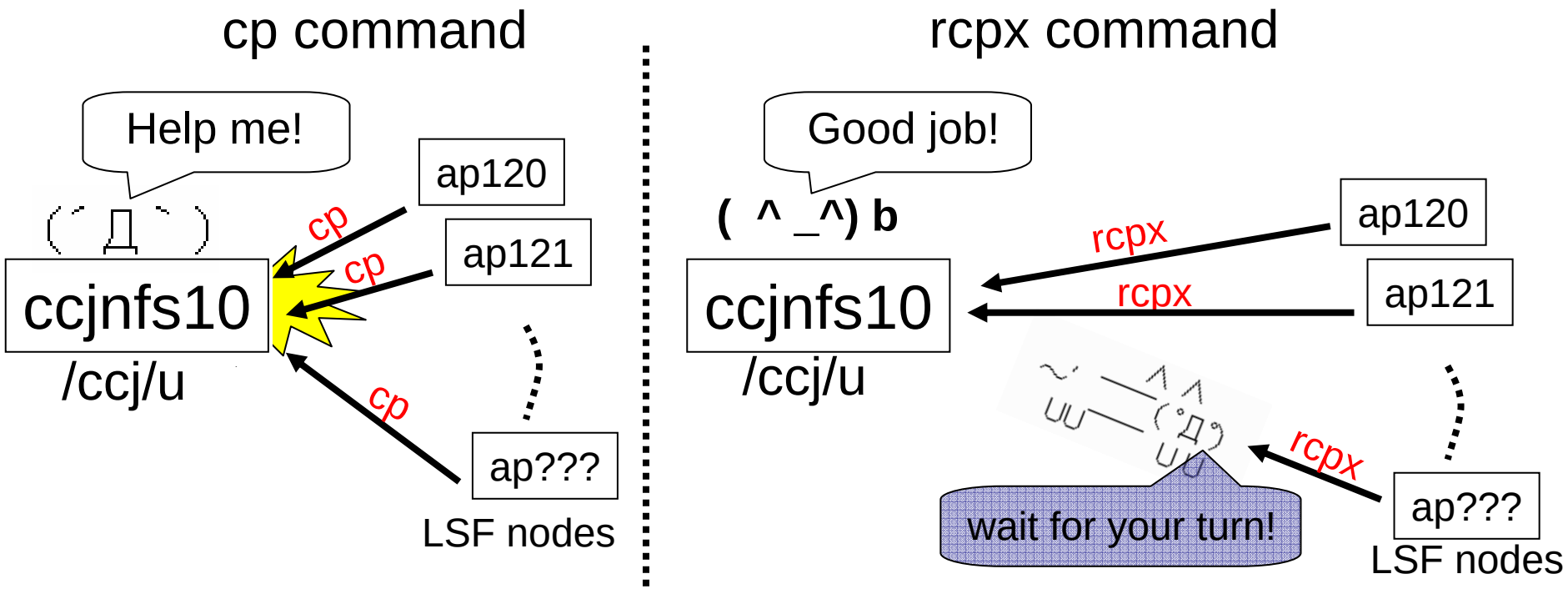
DO NOT USE “cp”
Use “rcpx” instead

- has local disk at /job_tmp
- ate /job_tmp/yourname and work on it.

Copy all necessary files to /job_tmp/yourname → execute → Copy output file(like .root) to /job_tmp/yourname → Delete your files at /job_tmp/yourname

NOTE: you can use /afs without copying it.(PHENIX libraries etc..)

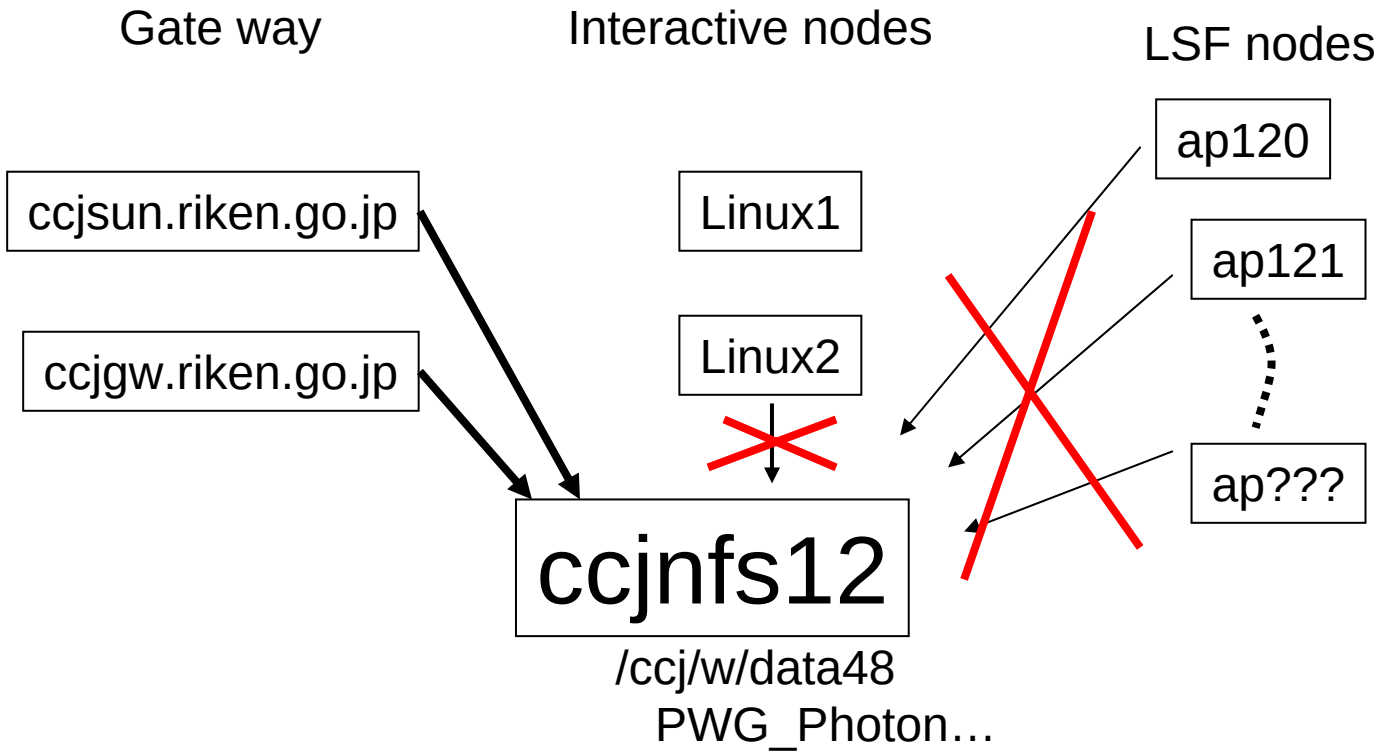
rcpx – special copy command



- rcpx command restricts “the number of processes accessing the machine at the same time” to reasonable level (~ 5) to save the machine from panic.

Get nDSTs

For example, some of PWG_Photon nDSTs are at /ccj/w/data48(at ccjnfs12)



- Machines where DSTs are, are only mounted on gateway machines.

Use rcpx to copy DST to your /job_tmp/yourname

rcpx – special copy command

```
ccjsun> rcpx ccjnfs12:/ccj/w/data48/run5pp-ndst/run_0000169000_0000170000/PWG_Photon/PWG_Photon_run5pp_v01CCJ_pro68-0000169717-0000.root .
```

DON’T FORGET MACHINE NAME!!!

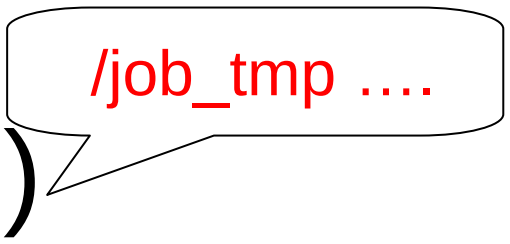
How do you know the machine name?

- Login to ccjgw.riken.go.jp and use df command

```
[aoki@ccjgw ~]$ df /ccj/w/data48
Filesystem           1K-blocks      Used Available Use% Mounted on
ccjnfs12:/ccj/w/data48
                     1756102752 1753834240   2268512 100% /direct/data48
[aoki@ccjgw ~]$
```

summary

- Three commands
  - bjobs show status of your jobs
  - bqueues show status of job queues
  - bsub submit jobs
- Your jobs SHOULD RUN AT /job_tmp/yourname
- Use rcpx to copy files to and from /job_tmp/yourname
  - Don’t forget to specify the machine name! otherwise it is useless.



example

- /WWW/p/draft/tutorial/example/tutorial
- Copy tutorial to your home and enjoy.